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NOTICE OF ALLOWANCE AND FEE(S) DUE

30431 7590 04/25/2008

STMICROELECTRONICS, INC.
MAIL STATION 2346
1310 ELECTRONICS DRIVE
CARROLLTON, TX 75006

EXAMINER

NEGRON, DANIEL L

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 04/25/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/993,986

11/05/2001

Fereidoon Heydari

01-S-045 (1678-47)

7945

TITLE OF INVENTION: CIRCUIT AND METHOD FOR DEMODULATING A SERVO POSITION BURST

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	07/25/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

30431 7590 04/25/2008

STMICROELECTRONICS, INC.
MAIL STATION 2346
1310 ELECTRONICS DRIVE
CARROLLTON, TX 75006

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,986	11/05/2001	Fereidoon Heydari	01-S-045 (1678-47)	7945

TITLE OF INVENTION: CIRCUIT AND METHOD FOR DEMODULATING A SERVO POSITION BURST

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	07/25/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
NEGRON, DANIEL L	2627	360-029000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,986	11/05/2001	Fereidoon Heydari	01-S-045 (1678-47)	7945
30431	7590	04/25/2008	EXAMINER	
STMICROELECTRONICS, INC. MAIL STATION 2346 1310 ELECTRONICS DRIVE CARROLLTON, TX 75006			NEGRON, DANIEL L.	
			ART UNIT	PAPER NUMBER
			2627	
DATE MAILED: 04/25/2008				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 322 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 322 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

09/993,986

Examiner

Daniell L. Negrón

Applicant(s)

HEYDARI ET AL.

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed March 7, 2008.
2. ☒ The allowed claim(s) is/are 1-5, 7-16, 19, 20, 22-56 (renumbered 1-52).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone communication with J. Mark Han (Reg. No. 57,898) on April 14, 2008.

The application has been amended as follows:

In claim 4, line 14:

delete "frist" and

insert -first-.

In claim 8, line 22:

delete "frist" and

insert -first-.

In claim 9, line 24:

delete "frist" and

insert -first-.

In claim 11, line 10:

delete "frist" and

insert –first-.

In claim 19, line 9:

delete "frist" and

insert –first-.

In claim 23 line 18:

delete "frist" and

insert –first-.

Allowable Subject Matter

2. Claims 1-5, 7-16, 19, 20, 22-56 (renumbered 1-52) are allowed.
3. The following is an examiner's statement of reasons for allowance:

Regarding claims 1-3, claim 1 discloses a position-burst demodulator comprising an input circuit operable to receive even and odd samples of a first servo position burst, to add the even samples to generate a first sum and to add the odd samples to generate a second sum, an intermediate circuit coupled to the input circuit and operable to square the first and second sums, and to add the squared first and second sums to generate a third sum, an output circuit coupled to the intermediate circuit and operable to calculate the square root of the third sum to generate an output signal representing a magnitude of the first servo position burst, which is neither disclosed or an obvious variation of the prior art.

Regarding claim 4, claim 4 discloses a position-burst demodulator, comprising an input circuit operable to receive and square first and second samples of a first servo position burst, an intermediate circuit coupled to the input circuit and operable to add the squared first and second samples to generate a first sum, an output circuit coupled to the intermediate circuit and operable to calculate the square root of the first sum, wherein the input circuit is operable to receive and square first and second samples of a second servo position burst, wherein the intermediate circuit is operable to add the squared first and second samples of the second servo position burst to generate a second sum, wherein the output circuit is operable to calculate the square root of the second sum, and a difference circuit operable to calculate a difference between the square roots of the first and second sums to generate an output signal representing an error between the first and second servo position bursts, which is neither disclosed or an obvious variation of the prior art.

Regarding claims 5, 7, and 32, claim 5 discloses a position-burst demodulator comprising a first adder operable to receive even and odd samples of a first servo position burst, to add the even samples together to generate a first sum, and to add the odd samples together to generate a second sum, a power circuit coupled to the first adder and operable to square the first sum and the second sum to respectively generate first and second squared sums, a second adder coupled to the power circuit and operable to add the first and second squared sums to generate a first sum of squares, and a root circuit coupled to the second adder and operable to calculate the square root of the first sum of squares to generate an output signal representing a magnitude of the first servo position burst, which is neither disclosed or an obvious variation of the prior art.

Regarding claims 8, 9, and 33-36, claims 8 and 9 disclose a position-burst demodulator comprising a first adder operable to receive first and second sets of samples of a first servo position burst, to add the samples in the first set together to generate a first sum, and to add the samples in the second set together to generate a second sum, a power circuit coupled to the first adder and operable to square the first sum and the second sum to respectively generate first and second squared sums, a second adder coupled to the squarer and operable to add the first and second squared sums to generate a first sum of squares; a root circuit coupled to the second adder and operable to calculate the square root of the first sum of squares; wherein the first adder is operable to receive first and second sets of samples of a second servo position burst, to add the samples in the first set together to generate a third sum, and to add the samples in the second set together to generate a fourth sum; wherein the power circuit is operable to square the third sum and the fourth sum to respectively generate third and fourth squared sums; wherein the second adder is operable to add the third and fourth squared sums to generate a second sum of squares, wherein the root circuit is operable to calculate the square root of the second sum of squares, and a difference circuit coupled to the root circuit and operable to calculate a difference between the square roots of the first and second sums of squares to generate an output signal representing an error between the first and second servo position bursts, which is neither disclosed or an obvious variation of the prior art.

Regarding claims 10, 16, 37, 38, 43, and 44 claims 10 and 16 disclose a circuit and corresponding method for adding even samples of a first servo position burst to generate a first sum, adding odd samples of the first servo position burst to generate a second sum, squaring the first and second sums, adding the squared first and second sums to generate a third sum, and

calculating the square root of the third sum to generate an output signal representing a magnitude of the first servo position burst, which is neither disclosed or an obvious variation of the prior art.

Regarding claims 11 and 19, claims 11 and 19 disclose a circuit and corresponding method for squaring first and second samples of a first servo position burst, adding the squared first and second samples to generate a first sum, calculating the square root of the first sum, squaring first and second samples of a second servo position burst, adding the squared first and second samples of the second servo position burst to generate a second sum, calculating the square root of the second sum, and calculating a difference between the square roots of the first and second sums to generate an output signal representing an error between the first and second servo position bursts, which is neither disclosed or an obvious variation of the prior art.

Regarding claims 20, 22, 45, and 46, claim 20 discloses a method comprising receiving even and odd samples of a first servo position burst, adding the even samples together to generate a first sum, adding the odd samples together to generate a second sum, squaring the first and second sums to respectively generate first and second squared sums, adding the first and second squared sums together to generate a first sum of squares, and calculating the square root of the first sum of squares to generate an output signal representing a magnitude of the first servo position burst, which is neither disclosed or an obvious variation of the prior art.

Regarding claims 23, 47, and 48, claim 23 discloses a method comprising receiving first and second sets of samples of a first servo position burst, adding the samples in the first set together to generate a first sum, adding the samples in the second set together to generate a second sum, squaring the first and second sums to respectively generate first and second squared sums, adding the first and second squared sums together to generate a first sum of squares,

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calculating the square root of the first sum of squares, receiving first and second sets of samples of a second servo position burst, adding the samples in the first set together to generate a third sum, adding the samples in the second set together to generate a fourth sum, squaring the third sum and the fourth sum to respectively generate third and fourth squared sums, adding the third and fourth squared sums to generate a second sum of squares, calculating the square root of the second sum of squares, and calculating a difference between the square roots of the first and second sums of squares to generate an output signal representing an error between the first and second servo position bursts, which is neither disclosed or an obvious variation of the prior art.

Regarding claims 12-15, 24-29, 39-42, and 49-56, reasons for allowance are as discussed in the previous Office action mailed October 18, 2007.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniell L. Negrón whose telephone number is (571) 272-7559. The examiner can normally be reached on Monday-Friday (8:30am-5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph H. Feild/
Supervisory Patent Examiner, Art Unit
2627

/D. L. N./
Examiner, Art Unit 2627
April 7, 2008